

## Glimpses of nature

### Survival in the Anthropocene

The sufferings of the biosphere through human activity is an unavoidable mark for the Anthropocene. We quantify pollution and extinction, define hotspots, and warn against climate change. In a way, all sorts of assessments we do to gauge the possibility of our survival in this degenerating world. What about other organisms? How do they cope with this gradually inhospitable environment? Studies have reported phenotypic and behavioral changes in the organism due to human pressure and that ranges from invertebrates to vertebrates. However, megafauna was out of the list for a long time due to procedural constraints. The gap has been filled up recently by a study on African elephants which reported a gradual rise in tuskless females in response to uncontrolled poaching. So, apart from law enforcement, elephants themselves are involved in protection with a weapon like evolution.

A study on the elephant herd in Gorongosa national park, Mozambique, Africa revealed a cascade of events that triggered visible changes in the elephant population. Decades-long survey data showed that almost ninety percent of the population (mostly tusked members) were wiped out due to ivory poaching during the twenty-year-long civil war. It, after recovery in post-war period, resulted to a disproportionate increase in tusk-less females eventually. These tusk-less mothers increased the population in course of time but there is distinct dominancy of the females. It happened due to the association of the tusk-less character (better to say the mutation) with the sex chromosome (X chromosome) and for its connection with the male lethality. As a result, all females either homozygous or heterozygous with the mutation join the herd but males do not due to the associated sex specific lethality. Furthermore, this study also explained the connection of the tusk-less character with the mutation in the AMELX candidate gene responsible for tusk development and its location in the sex chromosome (i.e., X chromosome). Apparently, this poaching-induced genetic change seemed to be better for the elephant population to sustain anthropogenic onslaught. However, the consequences of the associated male lethality are yet to be fully unraveled to determine their long-term survival in the African landscape.

*Source: Campbell-Staton et al. Science 374, 483 (2021) DOI: 10.1126/science.abe7389*

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